RESEARCH PROBLEM STATEMENT

Problem Title: Mitigate Queue Lengths in Work Zone Traffic Control **No.: 05.1-1**

Submitted By: Darrell Giannonatti and Doug Anderson **E-mail:**

1. Briefly describe the problem to be addressed:

Queue Lengths in Construction Work Zones lead to traffic delays, air quality issues, accidents, road rage, etc. UDOT needs additional tools to mitigate traffic ques in construction work zones.

2. List the research objective(s) to be accomplished:

1. Recommend ITS technology to manage work zone traffic queues.
2. Recommend Performance Based specifications to manage work zone traffic queues.
3. Recommend Innovative Contracting methods to manage work zone traffic queues.
4. Recommend applying above objectives to interstate and arterial roads.

3. List the major tasks required to accomplish the research objective(s): **Estimated person-hours**

1. Conduct a thorough state-of-the-art review on work zone traffic queue length mitigation. 100 hours

2. Review in detail methods that appear to be the most effective and efficient. This will include ITS applications such as requiring advanced signal construction with video detection cameras installed . 150 hours

3. Select techniques and equipment that could improve UDOT's traffic control plans and methods. 40 hours

4. Outline the proposed schedule (when do you need this done, and how we will get there):

Contract by June, 2005.
The project will be completed by October 31th, 2005.

5. Indicate type of research and / or development project this is:

Large: X **Research Project** ☐ **Development Project**

Small: ☐ **Research Evaluation** ☐ **Experimental Feature** ☐ **New Product Evaluation** ☐ **Tech Transfer Initiative** : ☐ **Other**_____

6. What type of entity is best suited to perform this project (University, Consultant, UDOT Staff, Other Agency, Other)?

Consideration will be given to either consultant or University, depending upon credibility of staff and ability to complete by October 31st, 2005.

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7. What deliverable(s) would you like to receive at the end of the project? (e.g. useable technical product, design method, technique, training, workshops, report, manual of practice, policy, procedure, specification, standard, software, hardware, equipment, training tool, etc.)

A complete report would document all aspects of the research. Identify the top three technologies and provide specifications and drawings, that could be be included in a construction project bid package.

8. Describe how will this project be implemented at UDOT.

Central Construction will work with Regions to identify proper projects for Implementation.

9. Describe how UDOT will benefit from the implementation of this project, and who the beneficiaries will be.

Work zones should be safer and more effectively move traffic through the corridor. Impacts to the public should be reduced in the form of time savings, fuel use, and crash related costs.

10. Describe the expected risks, obstacles, and strategies to overcome these.

Project funding is always limited. Funding may not be available for State-of-the-art methods.

11. List the key UDOT Champion of this project (person who will help Research steer and lead this project, and will participate in implementation of the results): Pete Negus

12. Estimate the cost of this research study including implementation effort (use person-hours from No. 3): $50,000

13. List other champions (UDOT and non-UDOT) who are interested in and willing to participate in the Technical Advisory Committee for this study:

Name	Organization/Division/Region	Phone	Attended UTRAC?
A) Region Construction Engineers (Dennis Simper, Karl Verhaeren)			
B) Members of Utah's contracting community (Rich Thorne appointed)			
C) Region traffic engineers (Brian Chamberlain or Chris Siavrakas)			
D)			
E)			
F)			
G)			

14. Identify other Utah agencies, regional or national agencies, or other groups that may have an interest in supporting this study: